Telecommunications Career Area

Job Roles

The job roles in the Telecommunications Career Area include the following competencies:

- ***Network Communications***

  Definition: works with the architecture and topology of ashore and afloat, deployed and Joint/Allied/Coalition networks and telecommunications systems, including Local Area Networks (LANs), Wide Area Networks (WANs), associated components, standards and protocols–their interoperation, control and management.

  1. Long Haul Communications
  2. Terrestrial Communications
  3. Telecommunications Systems Architecture
  4. Network Design
  5. Testing Processes and Procedures
  6. Operational Test and Evaluation
  7. Program Management
  8. Contracting Officer's Representative
  9. Information Assurance

- ***Network Communications Engineering***

  Definition: engineers ashore and afloat, deployed and Joint/Allied/Coalition networks and telecommunications systems; includes knowledge of transmissions, broadcasting, switching, control and operation of terrestrial, space, radio frequency (RF) and satellite networks, and telecommunications systems.

  1. Long Haul Communications
  2. Terrestrial Communications
  3. Satellite Communications
  4. Transmission Systems Engineering
  5. Telecommunications Systems Architecture
  6. Network Design
  7. Testing Processes and Procedures
  8. Operational Test and Evaluation
  9. Developmental Test and Evaluation
  10. Integrated Validation and Verification
  11. Program Management
  12. Contracting Officer's Representative
  13. Information Assurance

❖ ***Network Management***

Definition: designs networks and telecommunications systems and manages their operation; includes telecommunication system architectures, configuration management, and quality assurance (QA).

1. Network Management
2. Terrestrial Communications
3. Configuration Management
4. Telecommunications Systems Architecture
5. Network Design
6. Quality Assurance
7. Testing Processes and Procedures
8. Operational Test and Evaluation
9. Program Management
10. Contracting Officer's Representative
11. Information Assurance

❖ ***Policy***

Definition: develops, administers, and interprets broad communications policies and regulations that establish the DON's position on broad organizational telecommunications issues; considers the total range of existing policies (e.g., privacy and security), procedures, laws, and regulations in relation to national security and organizational program goals and objectives.

1. Policy Development and Implementation
2. Policy Assessment
3. Telecommunications Systems Architecture
4. Program Management
5. Contracting Officer's Representative
6. Information Assurance

❖ ***Project Management***

Definition: within the Telecommunications area, manages interrelated programs, contracts, and related supplier management functions; requires information transport and telecommunications technology life-cycle management skills.

1. Asset Management
2. Life Cycle Management
3. Configuration Management
4. Network Design
5. Telecommunications Systems Architecture
6. Program Management
7. Contracting Officer's Representative
8. Information Assurance

❖ ***Research & Development***

Definition: conducts basic scientific research and applies research to advanced technologies and prototypes for networks and telecommunications systems.

1. Basic Scientific Research
2. Applied Research
3. Advanced Concept Technology Demonstration
4. Requirements Analysis
5. Modeling and Simulation
6. Program Management
7. Contracting Officer's Representative
8. Information Assurance

❖ ***Network Operations***

Definition: uses standardized tools and methods to operate communication networks that provide voice, data, video and imagery services; includes network tech control, Joint/Allied/Coalition operations, and life cycle management; specialists working in this area manage and monitor communication networks and services throughout their entire life cycle, ensure mainframe connectivity, and work with infrastructure and wiring. *This job role is not considered inherently governmental.*

1. Network Operations
2. Encryption Tools and Techniques
3. Data Maintenance
4. Terrestrial Communications
5. Network Administration and Support
6. Telecommunications Systems Architecture
7. Information Assurance

Competencies by Job Role

The following table illustrates the breakout of competencies (along the left hand side) by job role (across the top) within this career area:

Competency:	Network Communications	Network Communications Engineering	Network Management	Network Operations	Policy	Project Management	Research and Development
Advanced Concept Technology Demonstration							●
Applied Research							●
Asset Management						●	
Basic Research							●
Configuration Management			●			●	
Contracting Officers Representative (COR)	●	●	●		●	●	●
Data Maintenance				●			
Developmental Test & Evaluation (DT&E)		●					●
Encryption Tools and Techniques				●			
Information Assurance	●	●	●	●	●	●	●
Integrated Verification & Validation (IV&V)		●					●
Life Cycle Management						●	
Long Haul Communications	●	●					
Modeling and Simulation							●
Network Administration and Support				●			
Network Design	●	●	●			●	
Network Management			●				
Network Operations				●			
Operational Test & Evaluation (OT&E)	●	●	●				
Policy Assessment					●		
Policy Development and Implementation					●		
Program Management	●	●	●		●	●	●
Quality Assurance			●				
Requirements Analysis							●
Satellite Communications		●					
Telecommunication System Architecture	●	●	●	●	●	●	●
Terrestrial Communications	●	●	●	●			

Competency:	Network Communications	Network Communications Engineering	Network Management	Network Operations	Policy	Project Management	Research and Development
Testing Processes and Procedures	●	●	●				
Transmission Systems Engineering		●					

Job Roles by Occupational Series

The following table presents a matrix of the occupational series (on the left side) by the job roles in this career area (across the top). It is It is offered as general guidance to help identify where the work performed in the various job roles may be found in the federal government workforce. As such, it does not depict every situation that could occur. More detailed information on the draft classification standard for the Information Technology Group (GS-2200) can be found in Appendix B of Volume I.

	Policy	Project Management	Network Communications	Network Communications Engineering	Network Management	Research & Development	* Network Operations
GS-335 Computer Clerk & Assistant							●
GS-340 Program Management	●	●					
GS-343 Management & Program Analysis	●	●					
GS-391 Telecommunications	●	●	●	●	●	●	●
GS-392 General Telecommunications			●		●		●
GS-854 Computer Engineer				●			
GS-855 Electronics Engineer				●			
GS-856 Electronics Technician				●			
GS-2210[1] IT Management	●	●	●	●	●	●	●

[1] Formerly GS-334 Computer Specialist.

Career Area: Telecommunications

Job Role: Network Communications

1	Competency: **Long Haul Communications**	Proficiency:		Level:					Skill Topics:
		Current	Required	E	I	J	S	Ex	
Strategic Value: *To design and implement communications architectures that utilize long haul communications.*	Learning Objectives: Knowledge of and ability to plan, design, implement and provide operational support of long haul communications networks.	0 1 2 3 4	0 1 2 3 4	X	X	X	X		- Strategic and tactical military communications - Transmission modulation techniques - Router and multiplexer technology - Wide Area Network (WAN) transmission - Analog and digital connectivity - Packet switched networks - Communication standards (e.g., X.25, Frame Relay, ATM, FDDI, ISDN, SONET, SMDS) - Satellite communications - PCS
	Developmental Opportunities: Learning: - Information Resources Management College, Global Enterprise Networking and Telecommunications (all) - Courses in telecommunications and electrical engineering (all) Work-based: - Visit field communications sites (all) - Job rotation (all) - Commercial Certification (all) - National Telecommunications and Information Administration (NTIA) procedures and standards (all)	Gap Assessment: _____ - _____ = _____ Required Proficiency - Current Proficiency = Gap Gap Mitigation Strategy:							

Career Area: Telecommunications

Job Role: Network Communications

2 Competency: **Terrestrial Communications**

Strategic Value:

To design and implement communications architectures that utilize terrestrial communications.

Learning Objectives:

Knowledge of and ability to plan, design, implement and provide operational support of terrestrial communications networks.

Proficiency:		Level:				
Current	Required	E	I	J	S	Ex
0 1 2 3 4	0 1 2 3 4	X	X	X	X	

Developmental Opportunities:

Learning:
- Information Resources Management College, Global Enterprise Networking and Telecommunications (all)
- Courses in telecommunications and electrical engineering (all)

Work-based:
- Visit field communications sites (all)
- Job rotation (all)
- Commercial Certification (all)
- National Telecommunications and Information Administration (NTIA) procedures and standards (all)

Gap Assessment:

_____ - _____ = _____

Required Proficiency - Current Proficiency = Gap

Gap Mitigation Strategy:

Skill Topics:

- Packet switched networks
- Communications standards
- Encryption
- Microwave communications
- POTS
- Cable, fiberoptic, twisted pair, wireless, laser, infrared and radar media
- Operational support
- Strategic and tactical military communications
- Switched system communications
- Life cycle provisioning and support
- Subsystem engineering techniques
- Switched communications architecture
- Navy Working Capital Fund
- ILS
- Planning, programming and budgeting
- Operational configuration management
- Operational policy and direction

Career Area: Telecommunications

Job Role: Network Communications

3	Competency: **Telecommunication System Architecture**	Proficiency:		Level:					Skill Topics:
		Current	Required	E	I	J	S	Ex	
Strategic Value: *To implement information transfer/telecommunications requirements into an integrated architecture.*	Learning Objectives: Knowledge of and ability to integrate major components of information/telecommunications networks and systems to include an understanding of their functionality, interfaces, associated technology and topology.	0 1 2 3 4	0 1 2 3 4	X	X	X	X		- Telecommunications networks - Mission analysis - Strategic and tactical military communications - Performance planning - Design and functional tradeoffs - Transmission modulation techniques - Operational effectiveness - Acquisition management - Router and multiplexer technology - Switches, Bridges, Hubs
	Developmental Opportunities: Learning: - Information Resources Management College, Managing Information Architectures and Infrastructures (all) - Information Resources Management College, Critical Information Systems Technologies (all) - Information Resources Management College, Global Enterprise Networking and Telecommunications (all) - Information Resources Management College, The Information Highway (all) - Courses in telecommunications and electrical engineering (all) Work-based: - Visit field communications sites (all) - Job rotation (all) - Commercial Certification (all) - National Telecommunications and Information Administration (NTIA) procedures and standards (all)	Gap Assessment: _____ - _____ = _____ Required Proficiency - Current Proficiency = Gap Gap Mitigation Strategy:							

Career Area: Telecommunications

Job Role: Network Communications

4	Competency: **Network Design**	Proficiency:		Level:					Skill Topics:
		Current	Required	E	I	J	S	Ex	
Strategic Value: *To conduct capacity planning for future telecommunications systems and assist customers in network planning, design, modification, and other functions including migration strategy development.*	Learning Objectives: Knowledge of and ability to evolve communications networks to achieve greater capacity, improved service and more cost effective operations.	0 1 2 3 4	0 1 2 3 4	X	X	X	X		- Network design - Communication networks - Capacity planning - Strategic and tactical military communications - Migration strategy development - Modeling - Communications-electronic principles
	Developmental Opportunities: Learning: - Information Resources Management College, Global Enterprise Networking and Telecommunications (all) - Courses in telecommunications and electrical engineering (all) Work-based: - Visit field communications sites (all) - Job rotation (all) - Commercial Certification (all) - National Telecommunications and Information Administration (NTIA) procedures and standards (all)	Gap Assessment: _____ - _____ = _____ Required Proficiency - Current Proficiency = Gap Gap Mitigation Strategy:							

Career Area: Telecommunications

Job Role: Network Communications

5	Competency: **Testing Processes and Procedures**	Proficiency:		Level:					Skill Topics:
		Current	Required	E	I	J	S	Ex	
Strategic Value: *To ensure a life cycle test and evaluation program is established early in the acquisition process, monitoring implementation and results, and recommending changes.*	Learning Objectives: Knowledge of and ability to analyze requirements and develop an appropriate test and evaluation program to assure timely development, production, and fielding of systems and products that meet requirements.	0 1 2 3 4	0 1 2 3 4	X	X	X			- Information systems - Commercial off-the-shelf software (COTS) - Government off-the-shelf software (GOTS) - Strategic and tactical military communications - Telecommunications systems and environments - Modeling concepts - Test and evaluation tools - Computer systems - Standards conformance testing - Interoperability certifications - Functionality testing - Security test and evaluation
	Developmental Opportunities: Learning: - Information Resources Management College, Global Enterprise Networking and Telecommunications (all) - Information Resources Management College, Critical Information System Technologies (all) - Courses in telecommunications and electrical engineering (all) Work-based: - Visit field communications sites (all) - Job rotation (all) - Commercial Certification (all) - National Telecommunications and Information Administration (NTIA) procedures and standards (all)	Gap Assessment: _____ - _____ = _____ Required Proficiency - Current Proficiency = Gap Gap Mitigation Strategy:							

Career Area: Telecommunications

Job Role: Network Communications

6 Competency: **Operational Test & Evaluation (OT&E)**

Strategic Value:

To assess a system's operational effectiveness and operational suitability in a realistic environment and to determine if the minimum acceptable operational performance requirements have been satisfied.

Learning Objectives:

Knowledge of and ability to analyze operational and technical characteristics, identify critical operational issues, and define, document, implement, execute and report results.

Proficiency:		Level:				
Current	Required	E	I	J	S	Ex
0 1 2 3 4	0 1 2 3 4	X	X	X	X	

Developmental Opportunities:

Learning:
- Information Resources Management College, Global Enterprise Networking and Telecommunications (all)
- Information Resources Management College, Critical Information System Technologies (all)
- Courses in telecommunications and electrical engineering (all)
- Attend testing conferences, such as ITEA conference (I, J)
- Attend courses on test design (E, I)

Work-based:
- Visit field communications sites (all)
- Job rotation (all)
- Commercial Certification (all)
- National Telecommunications and Information Administration (NTIA) procedures and standards (all)
- Evaluation metrics used at other sites (all)

Gap Assessment:

_____ - _____ = _____

Required Proficiency - Current Proficiency = Gap

Gap Mitigation Strategy:

Skill Topics:

- Interoperability analysis
- Strategic and tactical military communications
- Test methodologies
- Operational feasibility of proposed additions/modifications
- Test plans
- Operational environments for systems under testing
- Continuous comprehensive evaluation
- Telecommunications system testing
- Critical operational issues/measures of effectiveness
- Programmatic milestone decision support
- System performance operational testing and evaluation
- System architecture interoperability verification/certification testing

Career Area: Telecommunications

Job Role: Network Communications

7 Competency: **Program Management**

Strategic Value:

To achieve the needed outcomes of a specific program and related projects by ensuring proper management, performance and administration.

Learning Objectives:

Knowledge of the required outcomes, functional and political environments, organizations, activities, and constraints affecting a program. Knowledge of project definition and the ability to: relate required results and costs; lead teams that include members not in one's chain of command; apply systematic thinking to develop action plans; develop approaches to satisfy requirements and resolve issues; and ensure overall project quality. A PM has the knowledge and ability to coordinate the work of assigned staff and other functional experts matrixed to support the task.

Proficiency:		Level:				
Current	Required	E	I	J	S	Ex
0 1 2 3 4	0 1 2 3 4			X	X	X

Skill Topics:

- Program strategic planning
- Program role in organization/enterprise
- Visionary leadership
- Performance assessment
- Project integration management
- Quality management
- Risk management
- Financial management

Developmental Opportunities:

Learning:
- Information Resources Management College: (J, S)
  --Information Management Planning
  --Information Technology Acquisition for the CIO
  --IT Project Management
- STAR Program (all)
- DAWIA (all)

Work-based:
- Serve as Contracting Officer's Representative (J, S)
- Serve as project engineer or project manager (J)

Gap Assessment:

_____ - _____ = _____

Required Proficiency - Current Proficiency = Gap

Gap Mitigation Strategy:

Career Area: Telecommunications

Job Role: Network Communications

8	Competency: **Contracting Officers Representative (COR)**	Proficiency:		Level:					Skill Topics:
		Current	Required	E	I	J	S	Ex	
Strategic Value: *To ensure contractor performance and delivery is in compliance with a given contract.*	Learning Objectives: Knowledge of and ability to make technical decisions within the scope of the contract/task; serve as the day-to-day point of contact for contractual matters; assess the technical quality of performed work; approve deliverables for acceptance.	0 1 2 3 4	0 1 2 3 4		X	X	X		- Deliverable item review and approval - Contract types (e.g., IDIQ, cost reimbursable, time and materials, firm fixed price) - Cost reporting - Contract rates - Delivery orders - Other direct costs (ODCs) - Contract Line Items (CLINs) - Contract milestones - Life cycle management - Statements of Work (SOW) - Contract options
	Developmental Opportunities: Learning: - STAR Program (all) - DAWIA (all)	Gap Assessment: _____ - _____ = _____ Required Proficiency - Current Proficiency = Gap Gap Mitigation Strategy:							

Career Area: Telecommunications

Job Role: Network Communications

9	Competency: **Information Assurance**	Proficiency:		Level:					Skill Topics:
		Current	Required	E	I	J	S	Ex	
Strategic Value: *To acquire, maintain and ensure the security of information systems in an effective, interoperable, scalable, reliable, integrated and affordable fashion.*	Learning Objectives: Knowledge of and ability to apply physical access controls, technical security countermeasures, classification and safeguarding of controlled information and operational & industrial security. Ability to validate that appropriate countermeasures are being integrated correctly into program and to ensure that assurance evidence that demonstrates that the system is secure are produced.	0 1 2 3 4	0 1 2 3 4	X	X	X	X	X	- Information Systems Security - National Level IM/IT Policy - Trusted Systems - Discretionary and Mandatory Access Control - Identification and Authentication - Common criteria, DITSCAP - Assurance Evidence
	Developmental Opportunities: Learning: - NETg Technical Training Courses (all) Work-based: - Partnering with Industry (all) - Visit field communications sites (all) - Job rotation (all) - Commercial Certification (all)	Gap Assessment: _____ - _____ = _____ Required Proficiency - Current Proficiency = Gap Gap Mitigation Strategy:							

Career Area: Telecommunications

Job Role: Network Communications Engineering

1	Competency: **Long Haul Communications**	Proficiency:		Level:					Skill Topics:
		Current	Required	E	I	J	S	Ex	
Strategic Value: *To design and implement communications architectures that utilize long haul communications.*	Learning Objectives: Knowledge of and ability to plan, design, implement and provide operational support of long haul communications networks.	0 1 2 3 4	0 1 2 3 4	X	X	X	X		- Strategic and tactical military communications - Transmission modulation techniques - Router and multiplexer technology - Wide Area Network (WAN) transmission - Analog and digital connectivity - Packet switched networks - Communication standards (e.g., X.25, Frame Relay, ATM, FDDI, ISDN, SONET, SMDS)
	Developmental Opportunities: Learning: - Information Resources Management College, Global Enterprise Networking and Telecommunications (all) - Courses in telecommunications and electrical engineering (all) Work-based: - Visit field communications sites (all) - Job rotation (all) - Commercial Certification (all) - National Telecommunications and Information Administration (NTIA) procedures and standards (all)	Gap Assessment: _____ - _____ = _____ Required Proficiency - Current Proficiency = Gap Gap Mitigation Strategy:							

Career Area: Telecommunications

Job Role: Network Communications Engineering

2 Competency: **Terrestrial Communications**

Strategic Value:

To design and implement communications architectures that utilize terrestrial communications.

Learning Objectives:

Knowledge of and ability to plan, design, implement and provide operational support of terrestrial communications networks.

Proficiency:		Level:				
Current	Required	E	I	J	S	Ex
0 1 2 3 4	0 1 2 3 4	X	X	X	X	

Developmental Opportunities:

Learning:
- Information Resources Management College, Global Enterprise Networking and Telecommunications (all)
- Courses in telecommunications and electrical engineering (all)

Work-based:
- Visit field communications sites (all)
- Job rotation (all)
- Commercial Certification (all)
- National Telecommunications and Information Administration (NTIA) procedures and standards (all)

Gap Assessment:

_____ - _____ = _____

Required Proficiency - Current Proficiency = Gap

Gap Mitigation Strategy:

Skill Topics:

- Packet switched networks
- Communications standards
- Encryption
- Microwave communications
- POTS
- Cable, fiberoptic, twisted pair, wireless, laser, infrared and radar media
- Operational support
- Strategic and tactical military communications
- Switched system communications
- Life cycle provisioning and support
- Subsystem engineering techniques
- Switched communications architecture
- Navy Working Capital Fund
- ILS
- Planning, programming and budgeting
- Operational configuration management
- Operational policy and direction

Career Area: Telecommunications

Job Role: Network Communications Engineering

3 Competency: **Satellite Communications**

Strategic Value:

To design and implement communications architectures that utilize satellite communications and to operate maintain and procure systems that meet the DON satellite needs.

Learning Objectives:

Knowledge of and ability to plan, design, implement and provide operational support of satellite communications networks.

Proficiency:		Level:				
Current	Required	E	I	J	S	Ex
0 1 2 3 4	0 1 2 3 4	X	X	X	X	

Developmental Opportunities:

Learning:
- Information Resources Management College, Global Enterprise Networking and Telecommunications (all)
- Courses in telecommunications and electrical engineering (all)

Work-based:
- Visit field communications sites (all)
- Job rotation (all)
- Commercial Certification (all)
- National Telecommunications and Information Administration (NTIA) procedures and standards (all)

Gap Assessment:

_____ - _____ = _____

Required Proficiency - Current Proficiency = Gap

Gap Mitigation Strategy:

Skill Topics:

- Satellite frequency bands
- Bandwidth control procedures
- Terminal technical specifications
- Satellite onboard management
- Voice, video and data communications systems and transmit/receive interface requirements with satellite systems
- Encoding techniques, encryption devices, forward error correction techniques
- Satellite tracking systems
- Capacity planning
- Scenarios
- Power levels
- Data rates
- Satellite frequency approval
- Global satellite constellations
- Operational requirements
- Satellite systems engineering and site planning
- Operation of Earth and Space terminals
- Strategic and tactical parameters of terminals

Career Area: Telecommunications

Job Role: Network Communications Engineering

4 Competency: **Transmission Systems Engineering**

Strategic Value:

To plan, program, budget, acquire, integrate and provide life cycle management of leased and government owned transmission subsystems.

Learning Objectives:

Knowledge of and ability to manage and operate telecommunications transmission systems to include multiplexing techniques.

Proficiency:		Level:				
Current	Required	E	I	J	S	Ex
0 1 2 3 4	0 1 2 3 4	X	X	X	X	

Developmental Opportunities:

Learning:
- Information Resources Management College, Global Enterprise Networking and Telecommunications (all)
- Courses in telecommunications and electrical engineering (all)

Work-based:
- Visit field communications sites (all)
- Job rotation (all)
- Commercial Certification (all)
- National Telecommunications and Information Administration (NTIA) procedures and standards (all)

Gap Assessment:

_____ - _____ = _____

Required Proficiency - Current Proficiency = Gap

Gap Mitigation Strategy:

Skill Topics:

- Transmission/transport system leasing and acquisition
- Strategic and tactical military communications
- Terrestrial communications
- Satellite communications networks
- Router multiplexing techniques
- Problem analysis and resolution
- Commercial, Federal and Military standards for transmission facilities
- Telephone, video, RF and microwave systems
- Frequency management
- ILS
- Planning, programming and budgeting
- Network management
- Circuit and trunk allocation and engineering
- Configuration/change management

Career Area: Telecommunications

Job Role: Network Communications Engineering

5 Competency: **Telecommunication System Architecture**

Strategic Value:

To implement information transfer/telecommunications requirements into an integrated architecture.

Learning Objectives:

Knowledge of and ability to integrate major components of information/telecommunications networks and systems to include an understanding of their functionality, interfaces, associated technology and topology.

Proficiency:		Level:				
Current	Required	E	I	J	S	Ex
0 1 2 3 4	0 1 2 3 4	X	X	X	X	

Skill Topics:

- Telecommunications networks
- Mission analysis
- Strategic and tactical military communications
- Performance planning
- Design and functional tradeoffs
- Transmission modulation techniques
- Operational effectiveness
- Acquisition management
- Router and multiplexer technology
- Switches, Bridges, Hubs
- Network operating systems

Developmental Opportunities:

Learning:
- Information Resources Management College, Managing Information Architectures and Infrastructures (all)
- Information Resources Management College, Critical Information Systems Technologies (all)
- Information Resources Management College, Global Enterprise Networking and Telecommunications (all)
- Information Resources Management College, The Information Highway (all)
- Courses in telecommunications and electrical engineering (all)

Work-based:
- Visit field communications sites (all)
- Job rotation (all)
- Commercial Certification (all)
- National Telecommunications and Information Administration (NTIA) procedures and standards (all)

Gap Assessment:

_____ - _____ = _____

Required Proficiency - Current Proficiency = Gap

Gap Mitigation Strategy:

Career Area: Telecommunications

Job Role: Network Communications Engineering

6 Competency: **Network Design**

Strategic Value:

To conduct capacity planning for future telecommunications systems and assist customers in network planning, design, modification, and other functions including migration strategy development.

Learning Objectives:

Knowledge of and ability to evolve communications networks to achieve greater capacity, improved service and more cost effective operations.

Proficiency:		Level:				
Current	Required	E	I	J	S	Ex
0 1 2 3 4	0 1 2 3 4	X	X	X	X	

Skill Topics:

- Network design
- Communication networks
- Capacity planning
- Strategic and tactical military communications
- Migration strategy development
- Modeling
- Communications-electronic principles

Developmental Opportunities:

Learning:
- Information Resources Management College, Global Enterprise Networking and Telecommunications (all)
- Information Resources Management College, Critical Information System Technologies (all)
- Courses in telecommunications and electrical engineering (all)

Work-based:
- Visit field communications sites (all)
- Job rotation (all)
- Commercial Certification (all)
- National Telecommunications and Information Administration (NTIA) procedures and standards (all)

Gap Assessment:

Required Proficiency	-	Current Proficiency	=	Gap
_____	-	_____	=	____

Gap Mitigation Strategy:

Career Area: Telecommunications

Job Role: Network Communications Engineering

7	Competency: **Testing Processes and Procedures**	Proficiency:		Level:					Skill Topics:
		Current	Required	E	I	J	S	Ex	
Strategic Value: *To ensure a life cycle test and evaluation program is established early in the acquisition process, monitoring implementation and results, and recommending changes.*	Learning Objectives: Knowledge of and ability to analyze requirements and develop an appropriate test and evaluation program to assure timely development, production, and fielding of systems and products that meet requirements.	0 1 2 3 4	0 1 2 3 4	X	X	X			- Information systems - Commercial off-the-shelf software (COTS) - Government off-the-shelf software (GOTS) - Strategic and tactical military communications - Telecommunications systems and environments - Modeling concepts - Test and evaluation tools - Computer systems - Standards conformance testing - Interoperability certifications - Functionality testing - Security test and evaluation
	Developmental Opportunities: Learning: - Information Resources Management College, Global Enterprise Networking and Telecommunications (all) - Information Resources Management College, Critical Information System Technologies (all) - Courses in telecommunications and electrical engineering (all) Work-based: - Visit field communications sites (all) - Job rotation (all) - Commercial Certification (all) - National Telecommunications and Information Administration (NTIA) procedures and standards (all)	Gap Assessment: _____ - _____ = _____ Required Proficiency - Current Proficiency = Gap Gap Mitigation Strategy:							

Career Area: Telecommunications

Job Role: Network Communications Engineering

8 Competency: **Operational Test & Evaluation (OT&E)**

Strategic Value:

To assess a system's operational effectiveness and operational suitability in a realistic environment and to determine if the minimum acceptable operational performance requirements have been satisfied.

Learning Objectives:

Knowledge of and ability to analyze operational and technical characteristics, identify critical operational issues, and define, document, implement, execute and report results.

Proficiency:		Level:				
Current	Required	E	I	J	S	Ex
0 1 2 3 4	0 1 2 3 4	X	X	X	X	

Developmental Opportunities:

Learning:
- Information Resources Management College, Global Enterprise Networking and Telecommunications (all)
- Information Resources Management College, Critical Information System Technologies (all)
- Courses in telecommunications and electrical engineering (all)
- Attend testing conferences, such as ITEA conference (I, J)
- Attend courses on test design (E,I)

Work-based:
- Visit field communications sites (all)
- Job rotation (all)
- Commercial Certification (all)
- National Telecommunications and Information Administration (NTIA) procedures and standards (all)
- Evaluation metrics used at other sites (all)

Gap Assessment:

_____ - _____ = _____

Required Proficiency - Current Proficiency = Gap

Gap Mitigation Strategy:

Skill Topics:

- Interoperability analysis
- Strategic and tactical military communications
- Test methodologies
- Operational feasibility of proposed additions/modifications
- Test plans
- Operational environments for systems under testing
- Continuous comprehensive evaluation
- Telecommunications system testing
- Critical operational issues/measures of effectiveness
- Programmatic milestone decision support
- System performance operational testing and evaluation
- System architecture interoperability verification/certification testing

Career Area: Telecommunications

Job Role: Network Communications Engineering

9	Competency: **Developmental Test & Evaluation (DT&E)**	Proficiency:		Level:					Skill Topics:
		Current	Required	E	I	J	S	Ex	
Strategic Value: *To promote the development and acceptance of information systems to meet stakeholder requirements; to promote compliance with standards; to promote interoperability of standards compliant products in support of DON acquisition.*	Learning Objectives: Knowledge of and ability to analyze the technical characteristics, identify critical technical issues and design, implement, execute and report results.	0 1 2 3 4	0 1 2 3 4	X	X	X	X		- DT&E - Requirements and developmental analysis - Test coverage performance metrics - Quality assurance - Performance assurance - Product assurance - Standards conformance testing - Interoperability certification - Security testing - IV&V
	Developmental Opportunities: Learning: - Information Resources Management College, Global Enterprise Networking and Telecommunications (all) - Information Resources Management College, Critical Information System Technologies (all) - Courses in telecommunications and electrical engineering (all) - Attend testing conferences, such as ITEA conference (I, J) - Attend courses on test design (E, I) Work-based: - Visit field communications sites (all) - Job rotation (all) - Commercial Certification (all) - National Telecommunications and Information Administration (NTIA) procedures and standards (all)	Gap Assessment: _____ - _____ = _____ Required Proficiency - Current Proficiency = Gap Gap Mitigation Strategy:							

Career Area: Telecommunications

Job Role: Network Communications Engineering

10 Competency: **Integrated Verification & Validation (IV&V)**

Strategic Value:

To determine which system characteristics can be verified by analysis or simulation and which must be verified by demonstration and testing; to assess the progress being made in development and migration efforts prior to validation (including IV&V).

Learning Objectives:

Knowledge of and ability to provide formal verification and validation of required system performance characteristics.

Proficiency:		Level:				
Current	Required	E	I	J	S	Ex
0 1 2 3 4	0 1 2 3 4	X	X	X	X	

Skill Topics:

- IV&V processes
- Formal test and evaluation
- Continuous comprehensive evaluation
- Data collection and analysis
- Computer products and services analysis
- Telecom performance inspectio

Developmental Opportunities:

Learning:
- Information Resources Management College, Global Enterprise Networking and Telecommunications (all)
- Information Resources Management College, Critical Information System Technologies (all)
- Courses in telecommunications and electrical engineering (all)
- Attend testing conferences (I, J, S)

Work-based:
- Visit field communications sites (all)
- Job rotation (all)
- Commercial Certification (all)
- National Telecommunications and Information Administration (NTIA) procedures and standards (all)
- Participate in IV&V testing (E, I)

Gap Assessment:

_____ - _____ = _____

Required Proficiency - Current Proficiency = Gap

Gap Mitigation Strategy:

Career Area: Telecommunications

Job Role: Network Communications Engineering

11 Competency: **Program Management**

Strategic Value:

To achieve the needed outcomes of a specific program and related projects by ensuring proper management, performance and administration.

Learning Objectives:

Knowledge of the required outcomes, functional and political environments, organizations, activities, and constraints affecting a program. Knowledge of project definition and the ability to: relate required results and costs; lead teams that include members not in one's chain of command; apply systematic thinking to develop action plans; develop approaches to satisfy requirements and resolve issues; and ensure overall project quality. A PM has the knowledge and ability to coordinate the work of assigned staff and other functional experts matrixed to support the task.

Developmental Opportunities:

Learning:
- Information Resources Management College: (J, S)
  --Information Management Planning
  --Information Technology Acquisition for the CIO
  --IT Project Management
- STAR Program (all)
- DAWIA (all)

Work-based:
- Serve as Contracting Officer's Representative (J, S)
- Serve as project engineer or project manager (J)

Proficiency:		Level:				
Current	Required	E	I	J	S	Ex
0 1 2 3 4	0 1 2 3 4			X	X	X

Gap Assessment:

_____ - _____ = _____

Required Proficiency - Current Proficiency = Gap

Gap Mitigation Strategy:

Skill Topics:

- Program strategic planning
- Program role in organization/enterprise
- Visionary leadership
- Performance assessment
- Project integration management
- Quality management
- Risk management
- Financial management

Career Area: Telecommunications

Job Role: Network Communications Engineering

12	Competency: **Contracting Officers Representative (COR)**	Proficiency:		Level:					Skill Topics:
		Current	Required	E	I	J	S	Ex	
Strategic Value: *To ensure contractor performance and delivery is in compliance with a given contract.*	Learning Objectives: Knowledge of and ability to make technical decisions within the scope of the contract/task; serve as the day-to-day point of contact for contractual matters; assess the technical quality of performed work; approve deliverables for acceptance.	0 1 2 3 4	0 1 2 3 4		X	X	X		- Deliverable item review and approval - Contract types (e.g., IDIQ, cost reimbursable, time and materials, firm fixed price) - Cost reporting - Contract rates - Delivery orders - Other direct costs (ODCs) - Contract Line Items (CLINs) - Contract milestones - Life cycle management - Statements of Work (SOW) - Contract options
	Developmental Opportunities: Learning: - STAR Program (all) - DAWIA (all)	Gap Assessment: _____ - _____ = _____ Required Proficiency - Current Proficiency = Gap Gap Mitigation Strategy:							

Career Area: Telecommunications

Job Role: Network Communications Engineering

13	Competency: **Information Assurance**	Proficiency:		Level:					Skill Topics:
		Current	Required	E	I	J	S	Ex	
Strategic Value: *To acquire, maintain and ensure the security of information systems in an effective, interoperable, scalable, reliable, integrated and affordable fashion.*	Learning Objectives: Knowledge of and ability to apply physical access controls, technical security countermeasures, classification and safeguarding of controlled information and operational & industrial security. Ability to validate that appropriate countermeasures are being integrated correctly into program and to ensure that assurance evidence that demonstrates that the system is secure are produced.	0 1 2 3 4	0 1 2 3 4	X	X	X	X	X	- Information Systems Security - National Level IM/IT Policy - Trusted Systems - Discretionary and Mandatory Access Control - Identification and Authentication - Common criteria, DITSCAP - Assurance Evidence
	Developmental Opportunities: Learning: - NETg Technical Training Courses (all) Work-based: - Partnering with Industry (all) - Visit field communications sites (all) - Job rotation (all) - Commercial Certification (all)	Gap Assessment: _____ - _____ = _____ Required Proficiency - Current Proficiency = Gap Gap Mitigation Strategy:							

Career Area: Telecommunications

Job Role: Network Management

1	Competency: **Network Management**	Proficiency:		Level:					Skill Topics:
		Current	Required	E	I	J	S	Ex	
Strategic Value: *To provide applications and network services to users, as well as to install and manage those applications and services.*	Learning Objectives: Knowledge of and ability to install and manage network operating systems, printing services, and implement network applications and networks in multivendor environments.	0 1 2 3 4	0 1 2 3 4	X	X	X			- Network management - Systems administration - Telecommunications networks - Strategic and tactical military communications - Media characteristics - Policy and resource constraints - Integrated Logistics Support (ILS) - Site survey - Facility management - Configuration management - Provisioning policy - Trunk and circuit allocation and engineering process
	Developmental Opportunities: Learning: - Information Resources Management College, Global Enterprise Networking and Telecommunications (all) - Information Resources Management College, Critical Information System Technologies (all) - Courses in telecommunications and electrical engineering (all) - Attend network operations course (E, I) Work-based: - Visit field communications sites (all) - Job rotation (all) - Commercial Certification (all) - National Telecommunications and Information Administration (NTIA) procedures and standards (all) - Work as network administrator for operational session (I, J)	Gap Assessment: _____ - _____ = _____ Required Proficiency - Current Proficiency = Gap Gap Mitigation Strategy:							

Career Area: Telecommunications

Job Role: Network Management

2 Competency: **Terrestrial Communications**

Strategic Value:

To design and implement communications architectures that utilize terrestrial communications.

Learning Objectives:

Knowledge of and ability to plan, design, implement and provide operational support of terrestrial communications networks.

Proficiency:		Level:				
Current	Required	E	I	J	S	Ex
0 1 2 3 4	0 1 2 3 4	X	X	X	X	

Developmental Opportunities:

Learning:
- Information Resources Management College, Global Enterprise Networking and Telecommunications (all)
- Courses in telecommunications and electrical engineering (all)

Work-based:
- Visit field communications sites (all)
- Job rotation (all)
- Commercial Certification (all)
- National Telecommunications and Information Administration (NTIA) procedures and standards (all)

Gap Assessment:

_____ - _____ = _____

Required Proficiency - Current Proficiency = Gap

Gap Mitigation Strategy:

Skill Topics:

- Packet switched networks
- Communications standards
- Encryption
- Microwave communications
- POTS
- Cable, fiberoptic, twisted pair, wireless, laser, infrared and radar media
- Operational support
- Strategic and tactical military communications
- Switched system communications
- Life cycle provisioning and support
- Subsystem engineering techniques
- Switched communications architecture
- Navy Working Capital Fund
- ILS
- Planning, programming and budgeting
- Operational configuration management
- Operational policy and direction

Career Area: Telecommunications

Job Role: Network Management

3	Competency: **Configuration Management**	Proficiency:		Level:					Skill Topics:
		Current	Required	E	I	J	S	Ex	
Strategic Value: *To provide positive control of system configuration to ensure system interoperability.*	Learning Objectives: Knowledge of and ability to provide technical and administrative direction and surveillance to formally document and control the functional and physical characteristics of a system, network or product, including its requirements, design, software, hardware, documentation and release during the system's life cycle.	0 1 2 3 4	0 1 2 3 4	X	X	X	X		- Configuration management and control methods and procedures - Change management process - Development management - Implementation management - Telecommunications systems - Strategic and tactical military communications - Mission support software - Operational concepts
	Developmental Opportunities: Learning: - Information Resources Management College, Global Enterprise Networking and Telecommunications (all) - Information Resources Management College, Critical Information System Technologies (all) - Courses in telecommunications and electrical engineering (all) - Attend formal CM training (E, I) - Attend CM conferences (I, J, S) Work-based: - Visit field communications sites (all) - Job rotation (all) - Commercial Certification (all) - National Telecommunications and Information Administration (NTIA) procedures and standards (all) - Participate in writing of CM plan (I, J) - Participate in a CM audit (I, J) - Serve on a configuration control board (I, J) - Attend a CCB meeting (E)	Gap Assessment: _____ - _____ = _____ Required Proficiency - Current Proficiency = Gap Gap Mitigation Strategy:							

Career Area: Telecommunications

Job Role: Network Management

4 Competency: **Telecommunication System Architecture**

Strategic Value:

To implement information transfer/telecommunications requirements into an integrated architecture.

Learning Objectives:

Knowledge of and ability to integrate major components of information/telecommunications networks and systems to include an understanding of their functionality, interfaces, associated technology and topology.

Proficiency: Current	Proficiency: Required	Level: E	I	J	S	Ex
0 1 2 3 4	0 1 2 3 4	X	X	X	X	

Skill Topics:

- Telecommunications networks
- Mission analysis
- Strategic and tactical military communications
- Performance planning
- Planning, design and functional tradeoffs
- Transmission modulation techniques
- Operational effectiveness
- Acquisition management
- Router and multiplexer technology
- Network operating systems

Developmental Opportunities:

Learning:
- Information Resources Management College, Managing Information Architectures and Infrastructures (all)
- Information Resources Management College, Critical Information Systems Technologies (all)
- Information Resources Management College, Global Enterprise Networking and Telecommunications (all)
- Information Resources Management College, The Information Highway (all)
- Courses in telecommunications and electrical engineering (all)

Work-based:
- Visit field communications sites (all)
- Job rotation (all)
- Commercial Certification (all)
- National Telecommunications and Information Administration (NTIA) procedures and standards (all)

Gap Assessment:

_____ - _____ = _____

Required Proficiency - Current Proficiency = Gap

Gap Mitigation Strategy:

Career Area: Telecommunications

Job Role: Network Management

5 Competency: **Network Design**

Strategic Value:

To conduct capacity planning for future telecommunications systems and assist customers in network planning, design, modification, and other functions including migration strategy development.

Learning Objectives:

Knowledge of and ability to evolve communications networks to achieve greater capacity, improved service and more cost effective operations.

Proficiency:		Level:				
Current	Required	E	I	J	S	Ex
0 1 2 3 4	0 1 2 3 4	X	X	X	X	

Skill Topics:

- Network design
- Communication networks
- Capacity planning
- Strategic and tactical military communications
- Migration strategy development
- Modeling
- Communications-electronic principles

Developmental Opportunities:

Learning:
- Information Resources Management College, Global Enterprise Networking and Telecommunications (all)
- Courses in telecommunications and electrical engineering (all)

Work-based:
- Visit field communications sites (all)
- Job rotation (all)
- Commercial Certification (all)
- National Telecommunications and Information Administration (NTIA) procedures and standards (all)

Gap Assessment:

_____ - _____ = _____

Required Proficiency - Current Proficiency = Gap

Gap Mitigation Strategy:

Career Area: Telecommunications

Job Role: Network Management

6 Competency: **Quality Assurance**

Strategic Value:

To design, develop and deploy high quality telecommunications systems by employing tools and methods that manage the system evolution.

Learning Objectives:

Knowledge of and ability to apply principles, methods and tools of quality assurance; includes translating functional requirements into technical requirements used for logical design or presenting alternative technologies or approaches.

Proficiency:		Level:				
Current	Required	E	I	J	S	Ex
0 1 2 3 4	0 1 2 3 4	X	X	X	X	

Skill Topics:

- Stakeholder requirements
- Testing processes and procedures
- OT&E
- DT&E
- IV&V
- Performance measurement
- Software metrics
- Design reviews

Developmental Opportunities:

Learning:
- Information Resources Management College, Global Enterprise Networking and Telecommunications (all)
- Information Resources Management College, Critical Information System Technologies (all)
- Courses in telecommunications and electrical engineering (all)
- Center for Quality Management courses (all)

Work-based:
- Visit field communications sites (all)
- Job rotation (all)
- Commercial Certification (all)
- National Telecommunications and Information Administration (NTIA) procedures and standards (all)

Gap Assessment:

_____ - _____ = _____

Required Proficiency - Current Proficiency = Gap

Gap Mitigation Strategy:

Career Area: Telecommunications

Job Role: Network Management

7	Competency: **Testing Processes and Procedures**	Proficiency:		Level:					Skill Topics:
		Current	Required	E	I	J	S	Ex	
Strategic Value: *To ensure a life cycle test and evaluation program is established early in the acquisition process, monitoring implementation and results, and recommending changes.*	Learning Objectives: Knowledge of and ability to analyze requirements and develop an appropriate test and evaluation program to assure timely development, production, and fielding of systems and products that meet requirements.	0 1 2 3 4	0 1 2 3 4	X	X	X			- Commercial off-the-shelf software (COTS) - Government off-the-shelf software (GOTS) - Strategic and tactical military communications - Telecommunications systems and environments - Modeling concepts - Test and evaluation tools - Standards conformance testing - Interoperability certifications - Functionality testing - Security test and evaluation
	Developmental Opportunities: Learning: - Information Resources Management College, Global Enterprise Networking and Telecommunications (all) - Information Resources Management College, Critical Information System Technologies (all) - Courses in telecommunications and electrical engineering (all) Work-based: - Visit field communications sites (all) - Job rotation (all) - Commercial Certification (all) - National Telecommunications and Information Administration (NTIA) procedures and standards (all)	Gap Assessment: _____ - _____ = _____ Required Proficiency - Current Proficiency = Gap Gap Mitigation Strategy:							

Career Area: Telecommunications

Job Role: Network Management

8 Competency: **Operational Test & Evaluation (OT&E)**

Strategic Value:

To assess a system's operational effectiveness and operational suitability in a realistic environment and to determine if the minimum acceptable operational performance requirements have been satisfied.

Learning Objectives:

Knowledge of and ability to analyze operational and technical characteristics, identify critical operational issues, and define, document, implement, execute and report results.

Developmental Opportunities:

Learning:
- Information Resources Management College, Global Enterprise Networking and Telecommunications (all)
- Information Resources Management College, Critical Information System Technologies (all)
- Courses in telecommunications and electrical engineering (all)
- Attend testing conferences, such as ITEA conference (I, J)
- Attend courses on test design (E, I)

Work-based:
- Visit field communications sites (all)
- Job rotation (all)
- Commercial Certification (all)
- National Telecommunications and Information Administration (NTIA) procedures and standards (all)
- Evaluation metrics used at other sites (all)

Proficiency:		Level:				
Current	Required	E	I	J	S	Ex
0 1 2 3 4	0 1 2 3 4	X	X	X	X	

Gap Assessment:

_____ - _____ = _____

Required Proficiency - Current Proficiency = Gap

Gap Mitigation Strategy:

Skill Topics:

- Interoperability analysis
- Strategic and tactical military communications
- Test methodologies
- Operational feasibility of proposed additions/modifications
- Test plans
- Operational environments for systems under testing
- Continuous comprehensive evaluation
- Telecommunications system testing
- Critical operational issues/measures of effectiveness
- Programmatic milestone decision support
- System performance operational testing and evaluation
- System architecture interoperability verification/certification testing

Career Area: Telecommunications

Job Role: Network Management

9	Competency: **Program Management**	Proficiency:		Level:					Skill Topics:
		Current	Required	E	I	J	S	Ex	
Strategic Value: *To achieve the needed outcomes of a specific program and related projects by ensuring proper management, performance and administration.*	Learning Objectives: Knowledge of the required outcomes, functional and political environments, organizations, activities, and constraints affecting a program. Knowledge of project definition and the ability to: relate required results and costs; lead teams that include members not in one's chain of command; apply systematic thinking to develop action plans; develop approaches to satisfy requirements and resolve issues; and ensure overall project quality. A PM has the knowledge and ability to coordinate the work of assigned staff and other functional experts matrixed to support the task.	0 1 2 3 4	0 1 2 3 4			X	X	X	- Program strategic planning - Program role in organization/enterprise - Visionary leadership - Performance assessment - Project integration management - Quality management - Risk management - Financial management
	Developmental Opportunities: Learning: - Information Resources Management College: (J, S) --Information Management Planning --Information Technology Acquisition for the CIO --IT Project Management - STAR Program (all) - DAWIA (all) Work-based: - Serve as Contracting Officer's Representative (J, S) - Serve as project engineer or project manager (J)	Gap Assessment: _____ - _____ = _____ Required Proficiency - Current Proficiency = Gap Gap Mitigation Strategy:							

Career Area: Telecommunications

Job Role: Network Management

10	Competency: **Contracting Officers Representative (COR)**	Proficiency:		Level:					Skill Topics:
		Current	Required	E	I	J	S	Ex	
Strategic Value: *To ensure contractor performance and delivery is in compliance with a given contract.*	Learning Objectives: Knowledge of and ability to make technical decisions within the scope of the contract/task; serve as the day-to-day point of contact for contractual matters; assess the technical quality of performed work; approve deliverables for acceptance.	0 1 2 3 4	0 1 2 3 4		X	X	X		- Deliverable item review and approval - Contract types (e.g., IDIQ, cost reimbursable, time and materials, firm fixed price) - Cost reporting - Contract rates - Delivery orders - Other direct costs (ODCs) - Contract Line Items (CLINs) - Contract milestones - Life cycle management - Statements of Work (SOW) - Contract options
	Developmental Opportunities: Learning: - STAR Program (all) - DAWIA (all)	Gap Assessment: _____ - _____ = _____ Required Proficiency - Current Proficiency = Gap Gap Mitigation Strategy:							

Career Area: Telecommunications

Job Role: Network Management

11	Competency: **Information Assurance**	Proficiency:		Level:					Skill Topics:
		Current	Required	E	I	J	S	Ex	
Strategic Value: *To acquire, maintain and ensure the security of information systems in an effective, interoperable, scalable, reliable, integrated and affordable fashion.*	Learning Objectives: Knowledge of and ability to apply physical access controls, technical security countermeasures, classification and safeguarding of controlled information and operational & industrial security. Ability to validate that appropriate countermeasures are being integrated correctly into program and to ensure that assurance evidence that demonstrates that the system is secure are produced.	0 1 2 3 4	0 1 2 3 4	X	X	X	X	X	- Information Systems Security - National Level IM/IT Policy - Trusted Systems - Discretionary and Mandatory Access Control - Identification and Authentication - Common criteria, DITSCAP - Assurance Evidence
	Developmental Opportunities: Learning: - NETg Technical Training Courses (all) Work-based: - Partnering with Industry (all) - Visit field communications sites (all) - Job rotation (all) - Commercial Certification (all)	Gap Assessment: _____ - _____ = _____ Required Proficiency - Current Proficiency = Gap Gap Mitigation Strategy:							

Career Area: Telecommunications

Job Role: Network Operations

1	Competency: **Network Operations**	Proficiency:		Level:					Skill Topics:
		Current	Required	E	I	J	S	Ex	
Strategic Value: *To provide applications and network services to users, as well as to install and manage those applications and services.*	Learning Objectives: Knowledge of and ability to install and manage network operating systems, printing services, and implement network applications and networks in multivendor environments.	0 1 2 3 4	0 1 2 3 4	X	X	X			- Network operating systems - Multitasking - Software components - Client software - Server software - TCP/IP utilities - Network services - Network printing - Network applications (e.g., e-mail and messaging, scheduling, groupware) - E-mail standards (e.g., X.400, X.500, SMTP) - Multivendor solutions - Wide-area networks - Bandwidth utilization - Remote access services
	Developmental Opportunities: Learning: - Information Resources Management College, Critical Information System Technologies (all) - Courses in telecommunications and electrical engineering (all) Work-based: - Visit field communications sites (all) - Job rotation (all) - Commercial Certification (all) - National Telecommunications and Information Administration (NTIA) procedures and standards (all)	Gap Assessment: _____ - _____ = _____ Required Proficiency - Current Proficiency = Gap Gap Mitigation Strategy:							

Career Area: Telecommunications

Job Role: Network Operations

2	Competency: **Encryption Tools and Techniques**	Proficiency:		Level:					Skill Topics:
		Current	Required	E	I	J	S	Ex	
Strategic Value: *To integrate encryption into telecommunications networks.*	Learning Objectives: Knowledge of and ability to design, support and integrate encryption techniques into telecommunications systems.	0 1 2 3 4	0 1 2 3 4	X	X	X	X		- PKI - Symmetric and asymmetric key - Cryptographic/encryption standards, products and protocols - Digital signatures - VPNs - Smart Cards - Ipsec - Secure Sockets Layer
	Developmental Opportunities: Learning: - Information Resources Management College, Global Enterprise Networking and Telecommunications (all) - Information Resources Management College, Critical Information System Technologies (all) - Courses in telecommunications and electrical engineering (all) Work-based: - Visit field communications sites (all) - Job rotation (all) - Commercial Certification (all) - National Telecommunications and Information Administration (NTIA) procedures and standards (all)	Gap Assessment: _____ - _____ = _____ Required Proficiency - Current Proficiency = Gap Gap Mitigation Strategy:							

Career Area: Telecommunications

Job Role: Network Operations

3	Competency: **Data Maintenance**	Proficiency:		Level:					Skill Topics:
		Current	Required	E	I	J	S	Ex	
Strategic Value: *To oversee the maintenance and management of data across the enterprise and be responsible for central information planning and control.*	Learning Objectives: Knowledge of and ability to develop and maintain a data architecture and provide the basis for the incremental, ordered design and development of systems based on successively more detailed levels of data modeling	0 1 2 3 4	0 1 2 3 4	X	X	X			- Structured Query Language - Data warehousing - DoD Data Administration - DII COE Shared Data Environment (SHADE) - C4ISR Core Architecture Data Model (CADM) - Commercial business practices (e.g., Enterprise Resource Planning)
	Developmental Opportunities: Learning: - Information Resources Management College, Data Management Strategies and Technologies: A Managerial Perspective (all) - Information Resources Management College, Critical Information System Technologies (all) - Courses in telecommunications and electrical engineering (all) Work-based: - Visit field communications sites (all) - Job rotation (all) - Commercial Certification (all) - National Telecommunications and Information Administration (NTIA) procedures and standards (all)	Gap Assessment: _____ - _____ = _____ Required Proficiency - Current Proficiency = Gap Gap Mitigation Strategy:							

Career Area: Telecommunications

Job Role: Network Operations

4 Competency: **Terrestrial Communications**

Strategic Value:

To design and implement communications architectures that utilize terrestrial communications.

Learning Objectives:

Knowledge of and ability to plan, design, implement and provide operational support of terrestrial communications networks.

Proficiency:		Level:				
Current	Required	E	I	J	S	Ex
0 1 2 3 4	0 1 2 3 4	X	X	X	X	

Developmental Opportunities:

Learning:
- Information Resources Management College, Global Enterprise Networking and Telecommunications (all)
- Courses in telecommunications and electrical engineering (all)

Work-based:
- Visit field communications sites (all)
- Job rotation (all)
- Commercial Certification (all)
- National Telecommunications and Information Administration (NTIA) procedures and standards (all)

Gap Assessment:

_____ - _____ = _____

Required Proficiency - Current Proficiency = Gap

Gap Mitigation Strategy:

Skill Topics:

- Packet switched networks
- Communications standards
- Encryption
- Microwave communications
- POTS
- Cable, fiberoptic, twisted pair, wireless, laser, infrared and radar media
- Operational support
- Strategic and tactical military communications
- Switched system communications
- Life cycle provisioning and support
- Subsystem engineering techniques
- Switched communications architecture
- Navy Working Capital Fund
- ILS
- Planning, programming and budgeting
- Operational configuration management
- Operational policy and direction

Career Area: Telecommunications

Job Role: Network Operations

5 Competency: **Network Administration and Support**

Strategic Value:

To design and operate network management systems to support the operation, administration, and maintenance of voice, video, data, imagery and video networks.

Learning Objectives:

Knowledge of and ability to apply methods and tools to carry out operational performance monitoring, fault detection and isolation and corrective action on telecommunications systems, networks, circuits and equipment.

Proficiency:		Level:				
Current	Required	E	I	J	S	Ex
0 1 2 3 4	0 1 2 3 4	X	X	X		

Skill Topics:

- Network operating systems
- Multitasking
- Software components
- Client software
- Server software
- TCP/IP utilities
- Network services
- Network printing
- Network applications (e.g., e-mail and messaging, scheduling, groupware)
- E-mail standards (e.g., X.400, X.500, SMTP)
- Multivendor solutions
- Performance Monitoring
- Network Management Systems (e.g., Tivoli, HP Open View)
- Bandwidth utilization
- Segmentation

Developmental Opportunities:

Learning:
- Information Resources Management College, Critical Information System Technologies (all)
- Courses in telecommunications and electrical engineering (all)

Work-based:
- Visit field communications sites (all)
- Job rotation (all)
- Commercial Certification (all)
- National Telecommunications and Information Administration (NTIA) procedures and standards (all)

Gap Assessment:

_____ - _____ = _____

Required Proficiency - Current Proficiency = Gap

Gap Mitigation Strategy:

Career Area: Telecommunications

Job Role: Network Operations

6 Competency: **Telecommunication System Architecture**

Strategic Value:

To implement information transfer/telecommunications requirements into an integrated architecture.

Learning Objectives:

Knowledge of and ability to integrate major components of information/telecommunications networks and systems to include an understanding of their functionality, interfaces, associated technology and topology.

Proficiency:		Level:				
Current	Required	E	I	J	S	Ex
0 1 2 3 4	0 1 2 3 4	X	X	X	X	

Skill Topics:

- Telecommunications networks
- Mission analysis
- Strategic and tactical military communications
- Performance planning
- Planning, design and functional tradeoffs
- Transmission modulation techniques
- Operational effectiveness
- Acquisition management
- Router and multiplexer technology
- Network operating systems

Developmental Opportunities:

Learning:
- Information Resources Management College, Managing Information Architectures and Infrastructures (all)
- Information Resources Management College, Critical Information Systems Technologies (all)
- Information Resources Management College, Global Enterprise Networking and Telecommunications (all)
- Information Resources Management College, The Information Highway (all)
- Courses in telecommunications and electrical engineering (all)

Work-based:
- Visit field communications sites (all)
- Job rotation (all)
- Commercial Certification (all)
- National Telecommunications and Information Administration (NTIA) procedures and standards (all)

Gap Assessment:

_____ - _____ = _____

Required Proficiency - Current Proficiency = Gap

Gap Mitigation Strategy:

Career Area: Telecommunications

Job Role: Network Operations

7	Competency: **Information Assurance**	Proficiency:		Level:					Skill Topics:
		Current	Required	E	I	J	S	Ex	
Strategic Value: *To acquire, maintain and ensure the security of information systems in an effective, interoperable, scalable, reliable, integrated and affordable fashion.*	Learning Objectives: Knowledge of and ability to apply physical access controls, technical security countermeasures, classification and safeguarding of controlled information and operational & industrial security. Ability to validate that appropriate countermeasures are being integrated correctly into program and to ensure that assurance evidence that demonstrates that the system is secure are produced.	0 1 2 3 4	0 1 2 3 4	X	X	X	X	X	- Information Systems Security - National Level IM/IT Policy - Trusted Systems - Discretionary and Mandatory Access Control - Identification and Authentication - Common criteria, DITSCAP - Assurance Evidence
	Developmental Opportunities: Learning: - NETg Technical Training Courses (all) Work-based: - Partnering with Industry (all) - Visit field communications sites (all) - Job rotation (all) - Commercial Certification (all)	Gap Assessment: _____ - _____ = _____ Required Proficiency - Current Proficiency = Gap Gap Mitigation Strategy:							

Career Area: Telecommunications

Job Role: Policy

1 Competency: **Policy Development and Implementation**

Strategic Value:

To develop staff and assist in the implementation of departmental policy regarding DON, DoD and Federal Government legislative mandates (i.e., Congressional Directives, Executive Orders, and policies relating to information systems communications).

Learning Objectives:

Knowledge of and ability to apply telecommunications concepts, principles, practices, procedures, policies, standards and operational requirements both internal and external to the DON (e.g., at the Joint Staff level) necessary to develop or modify telecommunications policy.

Proficiency: Current	Proficiency: Required	Level: E	I	J	S	Ex
0 1 2 3 4	0 1 2 3 4			X	X	X

Developmental Opportunities:

Learning:
- Information Resources Management College, Global Enterprise Networking and Telecommunications (all)
- Information Resources Management College, Critical Information System Technologies (all)
- Courses in telecommunications and electrical engineering (all)

Work-based:
- Visit field communications sites (all)
- Job rotation (all)
- Commercial Certification (all)
- National Telecommunications and Information Administration (NTIA) procedures and standards (all)

Gap Assessment:

_____ - _____ = _____

Required Proficiency - Current Proficiency = Gap

Gap Mitigation Strategy:

Skill Topics:

- Operational characteristics of communications
- Performance characteristics of communications
- Information equipment
- Telecommunications equipment
- Strategic and tactical military communications
- Network management
- Transmission media
- Information transport and switching
- Communications-electronic principles
- Commercial, Federal and Military standards
- Telecommunications regulatory environment
- Operational procedures
- Operational doctrine
- Telecommunications tariffs and pricing structure
- C4I issue resolution
- Policy directives
- Policy development
- Military and Civilian Agency communications
- Interoperability deficiencies
- Migration/integration initiatives
- DoD security
- Data handling

Career Area: Telecommunications

Job Role: Policy

2 Competency: **Policy Assessment**

Strategic Value:

To assess and accommodate military and civilian agency communications requirements and the ability to assess interoperability deficiencies in the implementation of mitigation/integration initiatives for information systems.

Learning Objectives:

Knowledge of and ability to analyze, plan, schedule, coordinate and develop legislation or telecommunications policy issuances that direct the course of telecommunications programs across organizational lines within Federal agencies or other organizations involved in providing telecommunications and services for the Federal Government.

Proficiency:		Level:					
Current	Required	E	I	J	S	Ex
0 1 2 3 4	0 1 2 3 4		X	X	X	

Skill Topics:

- Telecommunications equipment
- Military and Civilian Agency communications
- Interoperability deficiencies
- Migration
- Operational procedures
- Operational doctrine
- DoD security
- Data handling
- Information systems networks
- Policy directives

Developmental Opportunities:

Learning:
- Information Resources Management College, Global Enterprise Networking and Telecommunications (all)
- Information Resources Management College, Critical Information System Technologies (all)
- Courses in telecommunications and electrical engineering (all)

Work-based:
- Visit field communications sites (all)
- Job rotation (all)
- Commercial Certification (all)
- National Telecommunications and Information Administration (NTIA) procedures and standards (all)

Gap Assessment:

_____ - _____ = _____

Required Proficiency - Current Proficiency = Gap

Gap Mitigation Strategy:

Career Area: Telecommunications

Job Role: Policy

3	Competency: **Telecommunication System Architecture**	Proficiency:		Level:					Skill Topics:
		Current	Required	E	I	J	S	Ex	
Strategic Value: *To implement information transfer/telecommunications requirements into an integrated architecture.*	Learning Objectives: Knowledge of and ability to integrate major components of information/telecommunications networks and systems to include an understanding of their functionality, interfaces, associated technology and topology.	0 1 2 3 4	0 1 2 3 4	X	X	X	X		- Telecommunications networks - Mission analysis - Strategic and tactical military communications - Performance planning - Planning, design and functional tradeoffs - Transmission modulation techniques - Operational effectiveness - Acquisition management - Router and multiplexer technology - Network operating systems
	Developmental Opportunities: Learning: - Information Resources Management College, Managing Information Architectures and Infrastructures (all) - Information Resources Management College, Critical Information Systems Technologies (all) - Information Resources Management College, Global Enterprise Networking and Telecommunications (all) - Information Resources Management College, The Information Highway (all) - Courses in telecommunications and electrical engineering (all) Work-based: - Visit field communications sites (all) - Job rotation (all) - Commercial Certification (all) - National Telecommunications and Information Administration (NTIA) procedures and standards (all)	Gap Assessment: _____ - _____ = _____ Required Proficiency - Current Proficiency = Gap Gap Mitigation Strategy:								

Career Area: Telecommunications

Job Role: Policy

4 Competency: **Program Management**

Strategic Value:

To achieve the needed outcomes of a specific program and related projects by ensuring proper management, performance and administration.

Learning Objectives:

Knowledge of the required outcomes, functional and political environments, organizations, activities, and constraints affecting a program. Knowledge of project definition and the ability to: relate required results and costs; lead teams that include members not in one's chain of command; apply systematic thinking to develop action plans; develop approaches to satisfy requirements and resolve issues; and ensure overall project quality. A PM has the knowledge and ability to coordinate the work of assigned staff and other functional experts matrixed to support the task.

Proficiency: Current	Proficiency: Required	Level: E	I	J	S	Ex
0 1 2 3 4	0 1 2 3 4			X	X	X

Skill Topics:

- Program strategic planning
- Program role in organization/enterprise
- Visionary leadership
- Performance assessment
- Project integration management
- Quality management
- Risk management
- Financial management

Developmental Opportunities:

Learning:
- Information Resources Management College: (J, S)
  --Information Management Planning
  --Information Technology Acquisition for the CIO
  --IT Project Management
- STAR Program (all)
- DAWIA (all)

Work-based:
- Serve as Contracting Officer's Representative (J, S)
- Serve as project engineer or project manager (J)

Gap Assessment:

_____ - _____ = _____

Required Proficiency - Current Proficiency = Gap

Gap Mitigation Strategy:

Career Area: Telecommunications

Job Role: Policy

5	Competency: **Contracting Officers Representative (COR)**	Proficiency:		Level:					Skill Topics:
		Current	Required	E	I	J	S	Ex	
Strategic Value: *To ensure contractor performance and delivery is in compliance with a given contract.*	Learning Objectives: Knowledge of and ability to make technical decisions within the scope of the contract/task; serve as the day-to-day point of contact for contractual matters; assess the technical quality of performed work; approve deliverables for acceptance.	0 1 2 3 4	0 1 2 3 4		X	X	X		- Deliverable item review and approval - Contract types (e.g., IDIQ, cost reimbursable, time and materials, firm fixed price) - Cost reporting - Contract rates - Delivery orders - Other direct costs (ODCs) - Contract Line Items (CLINs) - Contract milestones - Life cycle management - Statements of Work (SOW) - Contract options
	Developmental Opportunities: Learning: - STAR Program (all) - DAWIA (all)	Gap Assessment: _____ - _____ = _____ Required Proficiency - Current Proficiency = Gap Gap Mitigation Strategy:							

Career Area: Telecommunications

Job Role: Policy

6	Competency: **Information Assurance**	Proficiency:		Level:					Skill Topics:
		Current	Required	E	I	J	S	Ex	
Strategic Value: *To acquire, maintain and ensure the security of information systems in an effective, interoperable, scalable, reliable, integrated and affordable fashion.*	Learning Objectives: Knowledge of and ability to apply physical access controls, technical security countermeasures, classification and safeguarding of controlled information and operational & industrial security. Ability to validate that appropriate countermeasures are being integrated correctly into program and to ensure that assurance evidence that demonstrates that the system is secure are produced.	0 1 2 3 4	0 1 2 3 4	X	X	X	X	X	- Information Systems Security - National Level IM/IT Policy - Trusted Systems - Discretionary and Mandatory Access Control - Identification and Authentication - Common criteria, DITSCAP - Assurance Evidence
	Developmental Opportunities: Learning: - NETg Technical Training Courses (all) Work-based: - Partnering with Industry (all) - Visit field communications sites (all) - Job rotation (all) - Commercial Certification (all)	Gap Assessment: _____ - _____ = _____ Required Proficiency - Current Proficiency = Gap Gap Mitigation Strategy:							

Career Area: Telecommunications

Job Role: Project Management

1 Competency: **Asset Management**

Strategic Value:

To manage the inventory of DON and organization telecommunications technology assets for DON programs and operations.

Learning Objectives:

Knowledge of and ability to apply methods and procedures to identify, purchase, distribute, and maintain telecommunications technology assets.

Proficiency:		Level:				
Current	Required	E	I	J	S	Ex
0 1 2 3 4	0 1 2 3 4	X	X	X		

Skill Topics:

- Asset management
- State-of-the-art planning strategies
- Telecommunication technology
- Strategic and tactical military communications
- Telecommunication resource utilization
- Acquisition packages

Developmental Opportunities:

Learning:
- Information Resources Management College, Global Enterprise Networking and Telecommunications (all)
- Courses in telecommunications and electrical engineering (all)

Work-based:
- Visit field communications sites (all)
- Job rotation (all)
- Commercial Certification (all)
- National Telecommunications and Information Administration (NTIA) procedures and standards (all)

Gap Assessment:

_____ - _____ = _____

Required Proficiency - Current Proficiency = Gap

Gap Mitigation Strategy:

Career Area: Telecommunications

Job Role: Project Management

2	Competency: **Life Cycle Management**	Proficiency:		Level:					Skill Topics:
		Current	Required	E	I	J	S	Ex	
Strategic Value: *To advise on communication system engineering design, planning and modeling.*	Learning Objectives: Knowledge of and ability to define the network environment, mission needs, requirements and operational objectives.	0 1 2 3 4	0 1 2 3 4	X	X	X	X		- System management - Communication system development and concepts - Strategic and tactical military communications - Functional requirements definitions - Digital communications - Analog communications - Frequency management - Communications security requirements - Operational doctrine - Organizational factors - Man-machine interfaces - DoD practices and procedures
	Developmental Opportunities: Learning: - Information Resources Management College, Global Enterprise Networking and Telecommunications (all) - Courses in telecommunications and electrical engineering (all) Work-based: - Visit field communications sites (all) - Job rotation (all) - Commercial Certification (all) - National Telecommunications and Information Administration (NTIA) procedures and standards (all)	Gap Assessment: _____ - _____ = _____ Required Proficiency - Current Proficiency = Gap Gap Mitigation Strategy:							

Career Area: Telecommunications

Job Role: Project Management

3	Competency: **Telecommunication System Architecture**	Proficiency:		Level:					Skill Topics:
		Current	Required	E	I	J	S	Ex	
Strategic Value: *To implement information transfer/telecommunications requirements into an integrated architecture.*	Learning Objectives: Knowledge of and ability to integrate major components of information/telecommunications networks and systems to include an understanding of their functionality, interfaces, associated technology and topology.	0 1 2 3 4	0 1 2 3 4	X	X	X	X		- Telecommunications networks - Mission analysis - Strategic and tactical military communications - Performance planning - Design and functional tradeoffs - Transmission modulation techniques - Operational effectiveness - Acquisition management - Router and multiplexer technology - Proposal evaluation
	Developmental Opportunities: Learning: - Information Resources Management College, Managing Information Architectures and Infrastructures (all) - Information Resources Management College, Critical Information Systems Technologies (all) - Information Resources Management College, Global Enterprise Networking and Telecommunications (all) - Information Resources Management College, The Information Highway (all) - Courses in telecommunications and electrical engineering (all) Work-based: - Visit field communications sites (all) - Job rotation (all) - Commercial Certification (all) - National Telecommunications and Information Administration (NTIA) procedures and standards (all)	Gap Assessment: _____ - _____ = _____ Required Proficiency - Current Proficiency = Gap Gap Mitigation Strategy:								

Career Area: Telecommunications

Job Role: Project Management

4 Competency: **Configuration Management**

Strategic Value:

To provide positive control of system configuration to ensure system interoperability.

Learning Objectives:

Knowledge of and ability to provide technical and administrative direction and surveillance to formally document and control the functional and physical characteristics of a system, network or product, including its requirements, design, software, hardware, documentation and release during the system's life cycle.

Proficiency:		Level:				
Current	Required	E	I	J	S	Ex
0 1 2 3 4	0 1 2 3 4	X	X	X	X	

Skill Topics:

- Configuration management and control methods and procedures
- Change management process
- Development management
- Implementation management
- Telecommunications systems
- Strategic and tactical military communications
- Mission support software
- Operational concepts

Developmental Opportunities:

Learning:
- Information Resources Management College, Global Enterprise Networking and Telecommunications (all)
- Information Resources Management College, Critical Information System Technologies (all)
- Courses in telecommunications and electrical engineering (all)
- Attend formal CM training (E, I)
- Attend CM conferences (I, J, S)

Work-based:
- Visit field communications sites (all)
- Job rotation (all)
- Commercial Certification (all)
- National Telecommunications and Information Administration (NTIA) procedures and standards (all)
- Participate in writing of CM plan (I, J)
- Participate in a CM audit (I, J)
- Serve on a configuration control board (I, J)
- Attend a CCB meeting (E)

Gap Assessment:

_____ - _____ = _____

Required Proficiency - Current Proficiency = Gap

Gap Mitigation Strategy:

Career Area: Telecommunications

Job Role: Project Management

5 Competency: **Network Design**

Strategic Value:

To conduct capacity planning for future telecommunications systems and assist customers in network planning, design, modification, and other functions including migration strategy development.

Learning Objectives:

Knowledge of and ability to evolve communications networks to achieve greater capacity, improved service and more cost effective operations.

Proficiency:		Level:				
Current	Required	E	I	J	S	Ex
0 1 2 3 4	0 1 2 3 4	X	X	X	X	

Skill Topics:

- Network design
- Communication networks
- Capacity planning
- Strategic and tactical military communications
- Provisioning strategy development
- Trunk and circuit allocation and engineering
- Migration strategy development
- Modeling
- Communications-electronic principles

Developmental Opportunities:

Learning:
- Information Resources Management College, Global Enterprise Networking and Telecommunications (all)
- Information Resources Management College, Critical Information System Technologies (all)
- Courses in telecommunications and electrical engineering (all)

Work-based:
- Visit field communications sites (all)
- Job rotation (all)
- Commercial Certification (all)
- National Telecommunications and Information Administration (NTIA) procedures and standards (all)

Gap Assessment:

_____ - _____ = _____

Required Proficiency - Current Proficiency = Gap

Gap Mitigation Strategy:

Career Area: Telecommunications

Job Role: Project Management

6 Competency: **Program Management**

Strategic Value:

To achieve the needed outcomes of a specific program and related projects by ensuring proper management, performance and administration.

Learning Objectives:

Knowledge of the required outcomes, functional and political environments, organizations, activities, and constraints affecting a program. Knowledge of project definition and the ability to: relate required results and costs; lead teams that include members not in one's chain of command; apply systematic thinking to develop action plans; develop approaches to satisfy requirements and resolve issues; and ensure overall project quality. A PM has the knowledge and ability to coordinate the work of assigned staff and other functional experts matrixed to support the task.

Proficiency:		Level:				
Current	Required	E	I	J	S	Ex
0 1 2 3 4	0 1 2 3 4			X	X	X

Skill Topics:

- Program strategic planning
- Program role in organization/enterprise
- Visionary leadership
- Performance assessment
- Project integration management
- Quality management
- Risk management
- Financial management

Developmental Opportunities:

Learning:
- Information Resources Management College: (J, S)
  --Information Management Planning
  --Information Technology Acquisition for the CIO
  --IT Project Management
- STAR Program (all)
- DAWIA (all)

Work-based:
- Serve as Contracting Officer's Representative (J, S)
- Serve as project engineer or project manager (J)

Gap Assessment:

_____ - _____ = _____

Required Proficiency - Current Proficiency = Gap

Gap Mitigation Strategy:

Career Area: Telecommunications

Job Role: Project Management

7	Competency: **Contracting Officers Representative (COR)**	Proficiency:		Level:					Skill Topics:
		Current	Required	E	I	J	S	Ex	
Strategic Value: *To ensure contractor performance and delivery is in compliance with a given contract.*	Learning Objectives: Knowledge of and ability to make technical decisions within the scope of the contract/task; serve as the day-to-day point of contact for contractual matters; assess the technical quality of performed work; approve deliverables for acceptance.	0 1 2 3 4	0 1 2 3 4		X	X	X		- Deliverable item review and approval - Contract types (e.g., IDIQ, cost reimbursable, time and materials, firm fixed price) - Cost reporting - Contract rates - Delivery orders - Other direct costs (ODCs) - Contract Line Items (CLINs) - Contract milestones - Life cycle management - Statements of Work (SOW) - Contract options
	Developmental Opportunities: Learning: - STAR Program (all) - DAWIA (all)	Gap Assessment: _____ - _____ = _____ Required Proficiency - Current Proficiency = Gap Gap Mitigation Strategy:							

Career Area: Telecommunications

Job Role: Project Management

8	Competency: **Information Assurance**	Proficiency:		Level:					Skill Topics:
		Current	Required	E	I	J	S	Ex	
Strategic Value: *To acquire, maintain and ensure the security of information systems in an effective, interoperable, scalable, reliable, integrated and affordable fashion.*	Learning Objectives: Knowledge of and ability to apply physical access controls, technical security countermeasures, classification and safeguarding of controlled information and operational & industrial security. Ability to validate that appropriate countermeasures are being integrated correctly into program and to ensure that assurance evidence that demonstrates that the system is secure are produced.	0 1 2 3 4	0 1 2 3 4	X	X	X	X	X	- Information Systems Security - National Level IM/IT Policy - Trusted Systems - Discretionary and Mandatory Access Control - Identification and Authentication - Common criteria, DITSCAP - Assurance Evidence
	Developmental Opportunities: Learning: - NETg Technical Training Courses (all) Work-based: - Partnering with Industry (all) - Visit field communications sites (all) - Job rotation (all) - Commercial Certification (all)	Gap Assessment: _____ - _____ = _____ Required Proficiency - Current Proficiency = Gap Gap Mitigation Strategy:							

Career Area: Telecommunications

Job Role: Research and Development

1	Competency: **Basic Research**	Proficiency:		Level:					Skill Topics:
		Current	Required	E	I	J	S	Ex	
Strategic Value: *To conduct basic research to support future DON information and telecommunications systems.*	Learning Objectives: Knowledge of and ability to conduct cutting edge research and apply it to future DON needs.	0 1 2 3 4	0 1 2 3 4			X	X		- Publications and technical writing - Literature searches - Cooperative Research and Development Agreements (CRADAs) - Technical speech and presentation - Proposal development
	Developmental Opportunities: Learning: - Information Resources Management College, Global Enterprise Networking and Telecommunications (all) - Information Resources Management College, Critical Information System Technologies (all) - Courses in telecommunications and electrical engineering (all) - Classes for background as needed for new research topics (all) Work-based: - Visit field communications sites (all) - Job rotation (all) - Commercial Certification (all) - Conferences, workshops, presenting papers (all) - Professional study, journals (all) - Professional association membership (all) - Program Chair / Committees (all) - Dissertation committees (all) - Organizational trends (S, Ex) - Evaluating proposals (S, Ex)	Gap Assessment: _____ - _____ = _____ Required Proficiency - Current Proficiency = Gap Gap Mitigation Strategy:								

Career Area: Telecommunications

Job Role: Research and Development

2	Competency: **Applied Research**	Proficiency:		Level:					Skill Topics:
Strategic Value: *To apply basic research in support of future DON information and telecommunications systems.*	Learning Objectives: Knowledge of and ability to conduct and apply cutting edge research and apply it to future DON needs.	Current	Required	E	I	J	S	Ex	- Requirements analysis - Customer functional and infrastructure analysis - Customer information management - Customer requirements - Converting research into prototype systems - Transitioning from prototype systems to engineering development models - Test & Evaluation - Product design - Systems integration - CRADAs - Liaison with universities, industry
		0 1 2 3 4	0 1 2 3 4			X	X		
	Developmental Opportunities: Learning: - Information Resources Management College, Global Enterprise Networking and Telecommunications (all) - Information Resources Management College, Critical Information System Technologies (all) - Courses in telecommunications and electrical engineering (all) Work-based: - Visit field communications sites (all) - Job rotation (all) - Commercial Certification (all) - Conferences, workshops, presenting papers (all) - Professional study, journals (all) - Professional association membership (all) - Program Chair / Committees (all) - Dissertation committees (all) - Organizational trends (S, Ex) - Evaluating proposals (S, Ex) - National Telecommunications and Information Administration (NTIA) procedures and standards (all)	Gap Assessment: _____ - _____ = _____ Required Proficiency - Current Proficiency = Gap Gap Mitigation Strategy:								

Career Area: Telecommunications

Job Role: Research and Development

3 Competency: **Advanced Concept Technology Demonstration**

Strategic Value:

To develop prototypes of advanced technology for use in future DON information and telecommunications systems.

Learning Objectives:

Knowledge of and ability to apply cutting edge research into advanced concept technology demonstrations.

Proficiency: Current	Proficiency: Required	Level: E	I	J	S	Ex
0 1 2 3 4	0 1 2 3 4			X	X	

Skill Topics:

- Demonstrations and validation
- Customer requirements and support
- Training
- Graphical User Interface improvement
- Incremental development
- System integration and management
- Proposal development

Developmental Opportunities:

Learning:
- Information Resources Management College, Global Enterprise Networking and Telecommunications (all)
- Information Resources Management College, Critical Information System Technologies (all)
- Courses in telecommunications and electrical engineering (all)

Work-based:
- Visit field communications sites (all)
- Job rotation (all)
- Commercial Certification (all)
- Conferences, workshops, presenting papers (all)
- Professional study, journals (all)
- Professional association membership (all)
- Program Chair / Committees (all)
- Dissertation committees (all)
- Organizational trends (S, Ex)
- Evaluating proposals (S, Ex)
- National Telecommunications and Information Administration (NTIA) procedures and standards (all)

Gap Assessment:

_____ - _____ = _____

Required Proficiency - Current Proficiency = Gap

Gap Mitigation Strategy:

Career Area: Telecommunications

Job Role: Research and Development

4	Competency: **Telecommunication System Architecture**	Proficiency:		Level:					Skill Topics:
		Current	Required	E	I	J	S	Ex	
Strategic Value: *To implement information transfer/telecommunications requirements into an integrated architecture.*	Learning Objectives: Knowledge of and ability to integrate major components of information/telecommunications networks and systems to include an understanding of their functionality, interfaces, associated technology and topology.	0 1 2 3 4	0 1 2 3 4	X	X	X	X		- Telecommunications networks - Mission analysis - Strategic and tactical military communications - Performance planning - Design and functional tradeoffs - Transmission modulation techniques - Operational effectiveness - Acquisition management - Router and multiplexer technology - Proposal evaluation
	Developmental Opportunities: Learning: - Information Resources Management College, Managing Information Architectures and Infrastructures (all) - Information Resources Management College, Critical Information Systems Technologies (all) - Information Resources Management College, Global Enterprise Networking and Telecommunications (all) - Information Resources Management College, The Information Highway (all) - Courses in telecommunications and electrical engineering (all) Work-based: - Visit field communications sites (all) - Job rotation (all) - Commercial Certification (all) - National Telecommunications and Information Administration (NTIA) procedures and standards (all)	Gap Assessment: _____ - _____ = _____ Required Proficiency - Current Proficiency = Gap Gap Mitigation Strategy:								

Career Area: Telecommunications

Job Role: Research and Development

5	Competency: **Requirements Analysis**	Proficiency:		Level:					Skill Topics:
		Current	Required	E	I	J	S	Ex	
Strategic Value: *To ensure stakeholder (e.g. customers, end-users) requirements are incorporated in the systems engineering of information systems.*	Learning Objectives: Knowledge of and ability to analyze, identify, specify and manage functional and infrastructure requirements needed to achieve customer, organization and DON goals.	0 1 2 3 4	0 1 2 3 4	X	X	X	X		- Requirements analysis - Customer functional and infrastructure analysis - Customer information management - Customer requirements - DoD, DON mission, organization and roles
	Developmental Opportunities: Learning: - Information Resources Management College, Global Enterprise Networking and Telecommunications (all) - Courses in telecommunications and electrical engineering (all) - Attend course on Requirements Specification (E, I) Work-based: - Visit field communications sites (all) - Job rotation (all) - Commercial Certification (all) - National Telecommunications and Information Administration (NTIA) procedures and standards (all) - Work on specification writing team (E, I, J)	Gap Assessment: _____ - _____ = _____ Required Proficiency - Current Proficiency = Gap Gap Mitigation Strategy:							

Career Area: Telecommunications

Job Role: Research and Development

6 Competency: **Modeling and Simulation**

Strategic Value:

To evaluate and assess evolving information and telecommunications systems and to ensure greater efficiency, improved service, and cost effective operations.

Learning Objectives:

Knowledge of and ability to apply modeling and simulation tools and techniques to characterize systems of interest, to support decisions involving requirements, to evaluate design alternatives, to support training, or to support operational preparations.

Proficiency:		Level:				
Current	Required	E	I	J	S	Ex
0 1 2 3 4	0 1 2 3 4	X	X	X	X	

Skill Topics:

- Analytic modeling (includes methods and tools)
- Time-step simulation
- Event-step simulation
- Trace capture/playback
- Remote terminal emulation
- Database sampling
- Test data generators
- Protocols for federated models (e.g., DIS, ALSP, HLA)
- Simulation-based design

Developmental Opportunities:

Learning:
- Information Resources Management College, Global Enterprise Networking and Telecommunications (all)
- Information Resources Management College, Critical Information System Technologies (all)
- Courses in telecommunications and electrical engineering (all)
- Attend M&S conferences (I, J)

Work-based:
- Visit field communications sites (all)
- Job rotation (all)
- Commercial Certification (all)
- National Telecommunications and Information Administration (NTIA) procedures and standards (all)
- Visiting other DoD/civilian sites to learn about modeling and simulation (all)

Gap Assessment:

_____ - _____ = _____

Required Proficiency - Current Proficiency = Gap

Gap Mitigation Strategy:

Career Area: Telecommunications

Job Role: Research and Development

7	Competency: **Developmental Test & Evaluation (DT&E)**	Proficiency:		Level:					Skill Topics:
		Current	Required	E	I	J	S	Ex	
Strategic Value: *To promote the development and acceptance of information and telecommunications systems to meet stakeholder requirements; to promote compliance with standards; to promote interoperability of standards compliant products in support of DON acquisition.*	Learning Objectives: Knowledge of and ability to analyze the technical characteristics, identify critical technical issues and design, implement, execute and report results.	0 1 2 3 4	0 1 2 3 4	X	X	X	X		- DT&E - Requirements and developmental analysis - Test coverage performance metrics - Quality assurance - Performance assurance - Product assurance - Standards conformance testing - Interoperability certification - Security testing - IV&V
	Developmental Opportunities: Learning: - Information Resources Management College, Global Enterprise Networking and Telecommunications (all) - Information Resources Management College, Critical Information System Technologies (all) - Courses in telecommunications and electrical engineering (all) - Attend testing conferences, such as ITEA conference (I, J) - Attend courses on test design (E, I) Work-based: - Visit field communications sites (all) - Job rotation (all) - Commercial Certification (all) - National Telecommunications and Information Administration (NTIA) procedures and standards (all)	Gap Assessment: _____ - _____ = _____ Required Proficiency - Current Proficiency = Gap Gap Mitigation Strategy:							

Career Area: Telecommunications

Job Role: Research and Development

8 Competency: **Integrated Verification & Validation (IV&V)**

Strategic Value:

To determine which system characteristics can be verified by analysis or simulation and which must be verified by demonstration and testing; to assess the progress being made in development and migration efforts prior to validation (including IV&V).

Learning Objectives:

Knowledge of and ability to provide formal verification and validation of required system performance characteristics.

Proficiency:		Level:				
Current	Required	E	I	J	S	Ex
0 1 2 3 4	0 1 2 3 4	X	X	X	X	

Skill Topics:

- IV&V processes
- Formal test and evaluation
- Continuous comprehensive evaluation
- Data collection and analysis
- Computer products and services analysis
- Telecom performance inspection

Developmental Opportunities:

Learning:
- Information Resources Management College, Global Enterprise Networking and Telecommunications (all)
- Information Resources Management College, Critical Information System Technologies (all)
- Courses in telecommunications and electrical engineering (all)

Work-based:
- Visit field communications sites (all)
- Job rotation (all)
- Commercial Certification (all)
- National Telecommunications and Information Administration (NTIA) procedures and standards (all)

Gap Assessment:

Required Proficiency	-	Current Proficiency	=	Gap
_____	-	_____	=	_____

Gap Mitigation Strategy:

Career Area: Telecommunications

Job Role: Research and Development

9 Competency: **Program Management**

Strategic Value:

To achieve the needed outcomes of a specific program and related projects by ensuring proper management, performance and administration.

Learning Objectives:

Knowledge of the required outcomes, functional and political environments, organizations, activities, and constraints affecting a program. Knowledge of project definition and the ability to: relate required results and costs; lead teams that include members not in one's chain of command; apply systematic thinking to develop action plans; develop approaches to satisfy requirements and resolve issues; and ensure overall project quality. A PM has the knowledge and ability to coordinate the work of assigned staff and other functional experts matrixed to support the task.

Proficiency:		Level:				
Current	Required	E	I	J	S	Ex
0 1 2 3 4	0 1 2 3 4			X	X	X

Skill Topics:

- Program strategic planning
- Program role in organization/enterprise
- Visionary leadership
- Performance assessment
- Project integration management
- Quality management
- Risk management
- Financial management

Developmental Opportunities:

Learning:
- Information Resources Management College: (J, S)
  --Information Management Planning
  --Information Technology Acquisition for the CIO
  --IT Project Management
- STAR Program (all)
- DAWIA (all)

Work-based:
- Serve as Contracting Officer's Representative (J, S)
- Serve as project engineer or project manager (J)

Gap Assessment:

_____ - _____ = _____

Required Proficiency - Current Proficiency = Gap

Gap Mitigation Strategy:

Career Area: Telecommunications

Job Role: Research and Development

10	Competency: **Contracting Officers Representative (COR)**	Proficiency:		Level:					Skill Topics:
		Current	Required	E	I	J	S	Ex	
Strategic Value: *To ensure contractor performance and delivery is in compliance with a given contract.*	Learning Objectives: Knowledge of and ability to make technical decisions within the scope of the contract/task; serve as the day-to-day point of contact for contractual matters; assess the technical quality of performed work; approve deliverables for acceptance.	0 1 2 3 4	0 1 2 3 4		X	X	X		- Deliverable item review and approval - Contract types (e.g., IDIQ, cost reimbursable, time and materials, firm fixed price) - Cost reporting - Contract rates - Delivery orders - Other direct costs (ODCs) - Contract Line Items (CLINs) - Contract milestones - Life cycle management - Statements of Work (SOW) - Contract options
	Developmental Opportunities: Learning: - STAR Program (all) - DAWIA (all)	Gap Assessment: _____ - _____ = _____ Required Proficiency - Current Proficiency = Gap Gap Mitigation Strategy:							

Career Area: Telecommunications

Job Role: Research and Development

11 Competency: **Information Assurance**

Strategic Value:

To acquire, maintain and ensure the security of information systems in an effective, interoperable, scalable, reliable, integrated and affordable fashion.

Learning Objectives:

Knowledge of and ability to apply physical access controls, technical security countermeasures, classification and safeguarding of controlled information and operational & industrial security. Ability to validate that appropriate countermeasures are being integrated correctly into program and to ensure that assurance evidence that demonstrates that the system is secure are produced.

Proficiency:		Level:				
Current	Required	E	I	J	S	Ex
0 1 2 3 4	0 1 2 3 4	X	X	X	X	X

Skill Topics:

- Information Systems Security
- National Level IM/IT Policy
- Trusted Systems
- Discretionary and Mandatory Access Control
- Identification and Authentication
- Common criteria, DITSCAP
- Assurance Evidence

Developmental Opportunities:

Learning:
- NETg Technical Training Courses (all)

Work-based:
- Partnering with Industry (all)
- Visit field communications sites (all)
- Job rotation (all)
- Commercial Certification (all)

Gap Assessment:

_____ - _____ = _____

Required Proficiency - Current Proficiency = Gap

Gap Mitigation Strategy: